In the Claims:

The following listing of claims replaces all prior versions and listings of claims in the case.

1. (Currently amended): A disposable cassette for conducting electrophoresis, wherein the cassette comprises:

   i) an enclosed chamber having a top wall, a bottom wall, two side walls, a first end wall and a second end wall, wherein;

      the top wall comprises one or more apertures;

      the bottom wall is contiguous, and

      the chamber comprises a first region, a second region and a third region, wherein the second region is located between the first end wall and the third region, the first region is located between the second end wall and the third region, and the third region is located between the second region and the first region, and wherein the one or more apertures of the top wall are located above and adjacent to the third region;

      and wherein the chamber comprises an electrophoresis area;

   ii) an anode located within either the second region or the first region

   iii) a cathode located within either the second region or the first region, provided that the anode and the cathode are not together in the same region; and

   iv) an electrophoresis gel matrix, said electrophoresis gel matrix ~~a continuous electrophoretic separation medium~~ comprising one or more wells located below the apertures[[:]]

      ~~an electrophoresis gel matrix;~~

      ~~one or more wells in the electrophoresis gel matrix, wherein each well is located below the one of the apertures~~;

   wherein the electrophoresis gel matrix ~~continuous electrophoretic separation medium~~ substantially occupies the first region, the second region and the third region, and wherein at least a portion of the anode and the cathode are in contact with the electrophoresis gel matrix~~continuous electrophoretic separation medium~~.

2. (Previously presented): The disposable cassette of claim 1, wherein the third region is not sealed and either the second region or the first region is sealed, or the third region is not sealed and both the second region and the first region are sealed.

3. (Previously presented): The disposable cassette of claim 1, wherein the anode comprises an electrochemically ionizable conducting material, wherein the electrochemically ionizable conducting material is electrochemically ionizable during the electrophoresis.

4. (Previously presented): The disposable cassette of claim 3, wherein the electrochemically ionizable conducting material is a metal.

5. (Previously presented): The disposable cassette of claim 4, wherein the metal comprises copper.

6. (Previously presented): The disposable cassette of claim 4, wherein the metal comprises silver or lead.

7. (Previously presented): The disposable cassette of claim 1, wherein the anode comprises an oxygen-absorbing material.

8. (Previously presented): The disposable cassette of claim 1, wherein the anode is selected from the group consisting of aluminum and carbon.

9. (Previously presented): The disposable cassette of claim 1, wherein the electrophoresis gel matrix is substantially free from oxygen gas during the electrophoresis.

10-11. (Cancelled)

12. (Previously presented): The disposable cassette of claim 1, wherein the apertures corresponding to the one or more wells are spaced at predetermined intervals so as to conform with intervals between tips on a multi-pipette loader.

13. (Previously presented): The disposable cassette of claim 12, wherein the apertures are arranged in one or more rows.

14. (Previously presented): The disposable cassette of claim 12 wherein the apertures are arranged in two or more rows and the rows are arranged in a stagger format.

15-17. (Cancelled).

18. (Previously presented): The disposable cassette of claim 1, wherein the cassette further comprises a matrix, wherein the matrix is in contact with the cathode, and the matrix comprises at least one water sparingly soluble salt; and wherein during the electrophoresis the electrophoresis gel matrix comprises at least one water sparingly soluble salt ion.

19. (Previously presented): The disposable cassette of claim 1, wherein the cathode comprises a hydrogen-absorbing material.

20. (Previously presented): The disposable cassette of claim 1, wherein the cathode is selected from the group consisting of palladium, carbon and metal hydrides.

21. (Previously presented): The disposable cassette of claim 1, wherein the electrophoresis gel matrix is substantially free from hydrogen gas during the electrophoresis.

22 – 70 (Cancelled).

71. (Currently amended): A method for performing electrophoresis, the method comprising the steps of:

i) providing a disposable cassette, wherein the cassette comprises:

an enclosed chamber having a top wall, a bottom wall, two side walls, a first end wall and a second end wall, wherein;

the top wall comprises one or more apertures;

the bottom wall is contiguous, and

the chamber comprises a first region, a second region and a third region, wherein the second region is located between the first end wall and the

third region, the first region is located between the second end wall and the third region, and the third region is located between the second region and the first region, and wherein the one or more apertures of the top wall are located above and adjacent to the third region;

and wherein the chamber comprises an electrophoresis area;

an anode located within the second region or the first region;

a cathode located within the second region or the first region, provided that the anode and the cathode are not together in the same region;

an electrophoresis gel matrix, said electrophoresis gel matrix ~~a continuous electrophoretic separation medium~~ comprising one or more wells located below the apertures;~~:~~

~~an electrophoresis gel matrix;~~

~~one or more wells in the electrophoresis gel matrix, wherein each well is located below one of the apertures; and~~

wherein the electrophoresis gel matrix ~~continuous electrophoretic separation medium~~ substantially occupies the first region, the second region and the third region, and wherein at least a portion of the anode and the cathode are in contact with the electrophoresis gel matrix~~continuous electrophoretic separation medium;~~, and

ii) loading one or more samples into the one or more wells through the one or more apertures; and

iii) applying an electrical field to the electrophoresis gel matrix thereby performing electrophoresis.

72. (Cancelled)

73. (Previously presented): The method of claim 71, further comprising degrading a sparingly water-soluble salt in contact with the at least one cathode by the application of the electrical field thereby releasing ions required for maintaining the electrical field.

74. (Cancelled)

75. (Previously presented): The method of claim 71, further comprising the step of degrading the anode by the application of the electrical field, thereby releasing ions required for maintaining the electrical field, wherein the anode comprises an electrochemically ionizable conducting material.

76. (Cancelled).

77. (Previously presented): A method for electrophoresis, the method comprising the steps of: applying an electrical field to a gel comprising one or more wells, wherein the gel is contained within a disposable cassette comprising one or more apertures; degrading a metal anode by said application of said electrical field; releasing ions required for maintaining an electrical field by said degradation, and inhibiting migration of said ions in the vicinity of said anode.

78. (Cancelled)

79. (Previously presented): The method of claim 75, wherein the electrolyte is of a composition that inhibits migration of ions generated during the step of degrading the anode by the application of the electrical field.

80. (Previously presented): The method of claim 79, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE).

81. (Previously presented): The disposable cassette of claim 3, wherein the electrolyte is of a composition that inhibits the migration of ions generated during an electrochemical reaction of the electrochemically ionizable conducting material.

82. (Previously presented): The disposable cassette of claim 81, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE).

83-84. (Cancelled)

85. (Previously presented): The disposable cassette of claim 1, wherein the at least one anode is located within the second region and the at least one cathode is located within the first region.

86. (Previously presented): The disposable cassette of claim 1, wherein the at least one anode is located within the first region and the at least one cathode is located within the second region.

87. (Previously presented): The disposable cassette of claim 1, wherein the at least one anode or the at least one cathode is embedded within the electrophoresis gel matrix.

88. (Previously presented): The disposable cassette of claim 1, wherein the electrophoresis gel matrix further comprises ions generated during an electrochemical reaction of the anode during the electrophoresis.

89. (Previously presented): The disposable cassette of claim 1, wherein the electrolyte is of a composition that inhibits the migration of ions generated during the electrochemical reaction of the anode.

90. (Previously presented): The disposable cassette of claim 91, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE).

91. (Previously presented): The disposable cassette of claim 1, wherein the at least one anode and the at least one cathode are embedded within the electrophoresis gel matrix.

92. (Cancelled)

93. (Cancelled).

94. (Previously presented): The method of claim 71, wherein the third region is not sealed and either the second region or the first region is sealed before and during performing the electrophoresis, or the first region is not sealed and both the second region and the first region are sealed before and during performing the electrophoresis.

95. (Previously presented): The disposable cassette of claim 1, wherein the top wall is sealed to the side walls.

96. (Previously presented): The disposable cassette of claim 95, wherein the top wall is sealed to the to the first end wall and the second end wall.

97. (Previously presented): The method of claim 71, wherein the top wall is sealed to the side walls before and during performing electrophoresis.

98. (Previously presented): The method of claim 97, wherein the top wall is sealed to the to the first end wall and the second end wall before and while performing electrophoresis.

99. (Previously presented): The disposable cassette of claim 1, wherein the bottom wall is flat.

100. (Previously presented): The method of claim 71, wherein the bottom wall is flat.

101. (Previously presented): The disposable cassette of claim 1, further comprising a comb having one or more teeth protruding through the one or more apertures into the electrophoresis gel matrix.

102. (Cancelled).

103. (Previously presented): The disposable cassette of claim 1, wherein the electrolyte comprises Bis-Tris/Tricine, Bis-Tris/Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol/Proline, or Tris-Borate EDTA (TBE).

104. (Previously presented): The method of claim 71, wherein the electrolyte comprises Bis-Tris/Tricine, Bis-Tris/Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol/Proline, or Tris-Borate EDTA (TBE).

105. (Previously presented): The disposable cassette of claim 85, wherein the anode comprises an electrochemically ionizable metal.

106. (Previously presented): The disposable cassette of claim 86, wherein the anode comprises an electrochemically ionizable metal.

107. (Previously presented): The disposable cassette of claim 105, wherein the electrochemically ionizable metal comprises copper.

108. (Previously presented): The disposable cassette of claim 105, wherein the electrochemically ionizable metal comprises silver.

109. (Previously presented): The disposable cassette of claim 89, wherein the electrophoresis gel matrix is substantially free from oxygen gas during the electrophoresis.

110. (Previously presented): The method of claim 94, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE).

111. (Previously presented): The disposable cassette of claim 95, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE).

112. (Previously presented): The disposable cassette of claim 110, wherein the apertures corresponding to the one or more wells are spaced at predetermined intervals so as to conform with intervals between tips on a multi-pipette loader.

113. (Previously presented): The disposable cassette of claim 110, wherein the apertures corresponding to the one or more wells are arranged in one or more rows.

114. (Previously presented): The disposable cassette of claim 110, wherein the apertures are arranged in two or more rows and the rows are arranged in stagger format.

115. (Previously presented): The disposable cassette of claim 1, wherein the continuous electrophoretic separation medium comprises sufficient ions for performing electrophoresis.